

# **BREVARD COUNTY EMERGENCY MEDICAL SERVICES SYSTEM ANALYSIS**

Executive Leadership

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## **ABSTRACT**

The problem researched was, “Is the Brevard County Board of County Commissioners equitably and most cost efficiently providing Emergency Medical Services (EMS) to the constituents of Brevard County, Florida.”

The purpose of the project was to provide research, data, and recommendations to the Brevard County Board of County Commissioners and their appointed EMS Strategic Planning committee to assist with planning for the future provision of EMS.

The research methods used were evaluative and historical.

The null hypothesis was, “Brevard County is currently providing the most equitable and cost efficient EMS to all persons in Brevard County.” The research questions were; “Do all recipients receive the same level of EMS service?”, “Do all EMS providers charge the same for services?”, “Is the tax base for EMS services the same throughout the county?”, “Is the current combination of providers and services the most cost efficient management of EMS resources?”

The procedures included surveying the Brevard EMS providers, reviewing EMS related tax assessments, researching EMS provider contracts, operating costs, and financial records, gathering historical data by interview and newspaper archive search, and searching literature related to efficiency of EMS systems.

The results of the project indicated that EMS tax assessments and user fees vary through the county and are not equitable. The level of EMS service was substantially equitable with minor differences. The three primary EMS providers duplicated some services including three separate dispatch centers, management, billing, and provision of operational facilities.

The recommendations from the project included, “Brevard County should establish a consistent tax assessment and EMS user fee level throughout the county to avoid inequity to tax payers.”, “Brevard County should consolidate EMS services under the supervision of one provider to reduce duplicated services and operating costs.”, and “Ongoing research in this area should be continued to insure efficiency, equity, and system solvency is maintained.”

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## INTRODUCTION

The problem researched was, “Is Brevard County Board of County Commissioners providing the most equitable and cost efficient Emergency Medical Service (EMS) system to the constituents.” Equity is (more narrow than usually) defined as all constituents having access to the same level of EMS service at a similar cost, regardless of intracounty geopolitical considerations, such as location within municipalities or various locations within the unincorporated area of the county.

Health and welfare issues have traditionally been important policy issues to the community. Archeological evidence indicates that prehistoric peoples managed sophisticated prehospital health care procedures such as trepanation. Modern EMS systems developed as an outgrowth of lessons learned in the military conflicts. The responsibility for these systems are currently diffused through all levels of government in a “marble cake” model of federalism. (Banovetz 1994)

The federal government has developed and maintained national minimum standards for ambulance design and personnel training and certification through the Department of Transportation (DOT). This occurred historically as an outgrowth of the process in which the DOT initially regulated the physical design standards of ambulances and subsequently was tasked to regulate personnel working on the ambulances. The DOT has developed initial certification training and recertification training curricula for Emergency Medical Technician (EMT) and Emergency Medical Technician -- Paramedic (EMT-P) and for Ambulance Driver. (Banovetz 1994)

Each state government is tasked with the responsibility to coordinate with local governmental agencies the provision of services and matching it with community need. (Banovetz 1994) The State of Florida, by statute (FS 401) and regulatory rule (Florida Administrative Code Chapter 64E), provides

for each county entity to issue a “Certificate of Public Conveyance and Necessity” (COPCN) for each EMS provider as a form of licensure to do business in that county. The State of Florida manages vehicle permitting (issuing a permit for either “Advanced Life Support” or “Basic Life Support” ambulances), provider licensing, personnel certification (licensing) and training standard maintenance. It administers these through the Florida Department of Health and Rehabilitative Services, Office of Emergency Medical Services (HRS/EMS). Brevard County, in its local regulatory role as a “creature of the state”, became responsible for licensing local EMS providers and for local EMS system analysis and regulation. (Henry 1995)

The purpose of the project is to provide an ongoing evaluation of the existing system. This evaluation can then be used by the Brevard County Public Safety Department Director and/or by the EMS Strategic Planning committee to develop recommendations to the governing body, the Brevard County Board of County Commissioners to improve the system and provide for long range continuity of services.

The research methods used include evaluative and historical. A survey form was distributed to EMS providers in Brevard and all adjacent counties. The survey form is attached as Appendix A. The providers were surveyed for data related to the cost of service, user fee structures, and other anecdotal information (see Appendix C: EMS User Survey).

The research questions are “Do all recipients receive the same level of EMS service?”, “Do all EMS providers charge the same for services?”, “Is the tax base for EMS services the same throughout the county?”, “Is the current combination of providers and services the most efficient management of EMS resources?”

The null hypothesis is, “Brevard County Board of County Commissioners provides the most equitable and cost efficient EMS system possible with their current resources and technology to all the constituents of Brevard County.” The alternate hypothesis is, “Brevard County Board of County Commissioners does not provide the most equitable and cost efficient EMS system possible with their current resources and technology to all the constituents of Brevard County.”

## **BACKGROUND AND SIGNIFICANCE**

The background of the problem researched is that Brevard County’s EMS system evolved historically in an unplanned manner. Some recipients of the service complained to county commissioners that they pay more for services than other recipients and that the system is not as cost efficient as it can be. The Brevard County Commissioners perceive it is their responsibility to provide for the common good by evaluating and modifying the EMS system if improvement is needed. The commission directed the Public Safety Department to conduct a study of the existing EMS system. This project is related to the Executive Fire Officer program courses in which Executive Leadership is used to make system analyses and recommendations for planning changes (by the Brevard EMS Strategic Planning committee) using Executive Planning and Strategic Management of Change in which the fiscal, geopolitical, and organizational impacts must be considered for planning change in this EMS system.

American EMS became a regulated industry in the 1970's. Ambulance companies, prior to regulation, had been poorly regulated and some patients had suffered from unacceptable levels of care. Communities perceived EMS as a public health issue and tasked public sector to regulate and if necessary to provide this service for the public good. (Banovetz 1994) Public policy such as EMS

legislation (Florida Statute 401), DOT standards for EMS, Occupational Safety and Health Administration (OSHA) regulations, and the Fair Labor Standards Act (FLSA) guided changes in ambulance services that improved them but also made the industry more cost intensive and less profitable. EMS services became more and more a responsibility of the local government in a concept of “lemon socialism” in which government assumes a responsibility (by subsidy or by direct provision) for services which are no longer profitable for private industry to provide. Ambulances now have to meet DOT design standards and can no longer be an unequipped, converted hearse. Ambulance “attendants” have to be trained and certified as either Emergency Medical Technicians (EMT) or Emergency Medical Technician-Paramedics (EMT-P or paramedics). Reports have to be written and kept. Safety standards require immunizations, records, personal protective equipment, and documentation. The FLSA requires payment of overtime for employees who historically worked long hours and are on call while sleeping. These regulations have the cumulative effect of increasing labor and management costs and to private providers. Risk for the providers has concomitantly increased as tort law allows patients to hold providers accountable to the new standards or face civil liability for malpractice. Governmental agencies may have some relief from civil liability under “sovereign immunity” in which damage that can be recovered from any governmental entity in the State of Florida is limited to \$100,000.

Brevard had, in the early 1970's, an EMS system provided by two agencies, Brevard Medical Transport (BMT), a private for-profit company and Harbor City Volunteer Ambulance Service (HCVAS), a private not-for-profit company. Brevard County Fire Rescue (BCFR) provided fire protection and would respond to vehicle accidents to remove (extricate) patients from wrecked



vehicles. BCFR gradually expanded its role from extricating victims of auto accidents to providing initial first aid while waiting for one of the ambulances to arrive.

Brevard Medical Transport developed, like many other private providers, financial difficulties and in 1984 was incorporated into the fire department. The county authorized the purchase of their equipment and employment of BMT personnel by the Fire Rescue Department. BCFR then assumed the EMS responsibility for areas of the county that were not already served by HCVAS. The services by each agency included both Emergency Medical Service transport and Non-Emergency interfacility transport (transfers from one hospital to another or from nursing home to hospital). Brevard County now had two EMS providers. One was a public entity. The other was a politically powerful, private not-for-profit entity.

BCFR was unable to meet the demand for both emergency and non-emergency service. This resulted in some non-emergency patients having unacceptable waits for transportation service. The area hospitals (Wuesthoff Memorial Hospital, Parrish Medical Center, and Cape Canaveral Hospital) were affected by the lack of service. They created a cooperative known as Coastal Ambulance Service (as a private for-profit agency) and applied to the county for a Certificate of Public Conveyance and Necessity to provide non-emergency and interfacility transportation. This application was approved and Brevard County developed the current system of having three providers.

The Brevard County EMS system evolved as a disjointed concatenation of three agencies which provide different types of medical transportation to different geographical areas of the county (see Appendix B for a summary of services and EMS tax fees and Appendix D for a map of the geographical areas). BCFR is public and provides emergency-only transport to part of the county.

Coastal Ambulance Service (CAS) only provides non-emergency-only transport to the area served by BCFR. Harbor City Volunteer Ambulance Service provides both types of service within its geographical boundaries.

EMS is funded by a tax assessment and by user fees. The tax assessment is used to subsidize two providers (BCPSD & HCVAS). HCVAS and CAS work under contract to the Brevard County Board of County Commissioners (BCC). All three agencies bill recipients of the service and generate some user fee funding in addition to their tax revenue.

The commission, in a board meeting on April 29, 1997, responded to community concerns about inequity of tax assessments and questions about service by directing the Brevard County Public Safety Department to conduct an EMS system analysis and to share those findings with an EMS Strategic Planning committee which the commission appointed (pursuant to Brevard County Charter Article 5, section 5). The complainants made it clear their concern was with the funding and efficiency of the systems and not the systems quality.

The future impact of the problem researched is that Brevard County will be able to strategically plan for continued development of EMS and provide a more equitable funding base and increase cost efficiency.

## **LITERATURE REVIEW**

A literature search was conducted to obtain data related to fiscal management of EMS systems. Books and articles used as reference were obtained at the Brevard County Library, the University of Central Florida library, the National Fire Academy Learning Resource Center, and from sources on the

Internet. Financial records were acquired from the service providers. Federal and state legislation were obtained from the Internet and from Brevard County Public Safety Department (BCPSD) files. Minutes of meetings by the Brevard County Board of County Commissioners were obtained from the county administrator's office.

The Federal EMS Act of 1975 precipitated organized EMS systems by providing federal funding for their development. The definition of EMS system, according to the act, was the provision:

for arrangement of personnel, facilities, and equipment for the effective and coordinated delivery in an appropriate geographic area of health care services under emergency conditions and which is administered by a public or nonprofit (sic) private entity which has the authority and resources to provide effective administration of the system. (Narad 1990, pg.2)

The Brevard County Charter identifies a reluctance by the citizens of Brevard to raise taxes in Article 5 section 4 which states, "Brevard County shall not increase its Ad Valorem tax revenue ...in any one year by more than three percent (3%) ..." Commissioner Nancy Higgs identified a resource problem for the Brevard County EMS system in a commission meeting on April 8, 1997 during which she reported, "the Board had extensive discussion about long-term needs for the fire rescue system and the EMS system; if it does not do something, it will be looking at a tax increase..."

The literature identified a variety of potential funding sources.

Taxes were listed at the most prevalent source of funding. A "special tax" is a compulsory levy imposed on properties that receive a benefit from the service. These taxes are levied in an attempt to make the tax progressive. The EMS service is provided to the general public so it has regressive tendencies in that recipients of the service are not necessarily the property owner or tax payer. Local government agencies may propose the special tax ordinance. Adoption of an additional tax to

supplement, for a special purpose, existing taxes is not uncommon. Special assessments for EMS systems although sometimes called “benefit assessments” are usually assessed to property owners but are not proportional to the benefits received by the owner. (Peterson and Strachota 1991)

User fees are also customary for EMS and N-EMS transports. This concept is consistent with theories regarding progressive taxation. Fees vary among provider agencies. EMS agencies frequently contract with billing agencies to process “third party” billing. Such contracting is a component of “privatization”. (FEMA 1993; AAA 1994; United States General Accounting Office [GAO] 1997)

Amounts are generally guided by Diagnosis-Related Groups (DRGs), Medicare, and insurance companies. DRGs are based on the average cost of groups of patients with similar diagnoses. (Narad 1990) It is important to be legally informed regarding EMS billing to meet Medicare and Medicaid requirements. (FEMA 1993)

“Subscription” programs for EMS are offered by some departments to cover charges in excess of payment by insurance companies. Subscriptions are a form of insurance sold by the provider. The subscription guarantees a discount for service to the purchaser. Typically medical insurance does not cover 100% of an EMS bill. The voluntary annual subscription fee will cover those expenses not paid by insurance. (Murphy 1997; FEMA 1993) A program in San Clement, California is used as an example. All household members may have unlimited transports for EMS without having to pay any additional (to the insurance payment) charges for an annual subscription fee of \$35. It is emphasized that the subscription program is for medically necessary transports. (Murphy 1997; FEMA 1993)

Impact fees are paid by commercial property developers in a community. Developers benefit from the EMS system by developing and selling property to persons who will subsequently receive

services. The intent of impact fees is to tax the developer who is indirectly capitalizing on the EMS system (and other infrastructure) to generate profit from the development. Impact fees must be expended only for capital purchases within the district from which they were collected. (FEMA 1993; Peterson & Strachota 1991) Orange County (Florida) successfully uses impact fees and has combined fees from several areas to fund equipment purchases by the entire EMS system. (FEMA 1993)

Financing capital purchases is not a revenue source but is a method of funding. The cost of capital improvement can be a burden to a single department budget. Borrowing and repayment over time is one method to fund major capital expenditures while avoiding reductions in other fiscal needs. (Riley 1993; Aronson 1987; FEMA 1993) Bonds can be proposed by EMS fiscal managers and require voter approval. Bonds redistribute cost to future users. (Riley 1993; Aronson 1987;) Certificates of Participation (COPs) are a short term financing alternative to bond issue. COPs do not require voter approval and are usually tax exempt. A disadvantage to COPs is that operating fund may be required to be held to qualify for low interest rates. (FEMA 1993; Aronson 1987)

Lease purchasing is also a non-revenue funding source. Ambulances are occasionally acquired using this method. Lease purchase is more costly than outright purchase and is usually an unpopular and expensive alternative to procuring fleet vehicles. (FEMA 1993; Petersen & Strachota 1991)

Some state and federal grants are available to EMS providers. The State of Florida offers a County Cash Award program which can be used to provide expansion for EMS systems. Competitive matching grants are also provided by the State of Florida in which the grantee is required to provide a 25% cash match toward the total amount of the approved grant. One time grants are also available to EMS agencies for specific items. It is important for the agency to anticipate recurring costs that will

result form expansion or system improvement. (FEMA 1993; Riley 1991)

Privatization is considered an alternative to funding public EMS systems. (FEMA 1993; AAA 1994; GAO 1997) Privatization is defined as “shifting functions and responsibilities, in whole or in part, from the government to the private sector” (GAO 1997, pg. 1) There is hesitancy to privatize functions of government responsibilities that may be viewed by the community as being critical and necessary for the public good. The United States General Accounting Office (GAO) and the Office of Management and Budget (OMB) are among the proponents that certain services are “inherently governmental functions”. (Rosen 1993, pg. 231) Privatization is limited to areas in which governments may lack the capacity to serve, to services that have easily definable costs and benefits, and where politics are not significant. (Newell 1993)

Brevard County Board of County Commissioner meeting minutes of April 8, 1997 indicate HCVAS represented by Chief Executive Officer Alan Escoffery, International Association of Fire Fighters Local 2969 President Nancy Fazio, and Space Coast Fire Chiefs’ Association President Dan Rocque were agreed they did not support issuing a Request For Proposal (RFP) to private providers to propose EMS service in Brevard.

Some EMS systems provide emergency and non-emergency responses within certain geographic areas. Patterns of responses are affected by the geographic boundaries as well as demographic make up of the community. Coordination of response is critical to effective provision of service. Immediate emergency care can mean the difference between life and death to a patient. The first responder to an incident is crucial to the medical stabilization of the patient. Firefighters are recognized as first responders and they often arrive, because of their community based dispersal, on an

emergency scene before an ambulance. Coordinated EMS systems take advantage of first responders to initiate life saving measures. (Narad 1990)

The process of planning or redeveloping an EMS management system is an incremental process, sometimes called “muddling through”. Careful evaluation should be ongoing throughout the development stages. Defining the optimal system, with available funding, is usually the primary goal. Development of an acceptable system can then be accomplished by analyzing the current system, evaluating its strengths and weaknesses, setting objectives and a time line. (Narad 1997)

## **PROCEDURES**

The procedures include distribution to and collection of surveys from the three Brevard EMS providers and 14 additional EMS providers in adjacent counties. Procedures also included interviews, a literature review of current writings as well as related state and federal legislation, evaluation of minutes of meetings by the Board of County Commissioners and of the EMS Advisory Council, a site visit to Pinellas County (Florida) EMS system, and analysis of tax and financial records of the three “in county” providers. Care was exercised to discover hidden or redistributed costs (such as insurance, management, legal fees, facility costs, etc.).

The surveys were mailed to the 17 selected providers. Providers were selected on the basis of being adjacent to Brevard County or because their organizations had similar demographics to Brevard County. Follow up telephone calls were made to encourage participants to return the surveys. Interviews were conducted with the directors of all three Brevard County providers, Mr. Jack Parker, Brevard County Public Safety Director, Mr. Alan Escoffery, Harbor City Volunteer Ambulance Service

Chief Executive Officer, and Ms. Joan Madden, Coast Ambulance Service Director. The financial records including patient bills were examined. Brevard County Board of County Commissioner data including minutes of board meetings, contracts with the providers, tax records, and EMS Advisory Council meeting minutes were also examined.

The survey was designed to elicit both primary and secondary data. The primary data were those data related to the Brevard County (in-county) system and were elicited for the purpose of answering the research questions and null hypothesis. The secondary data were those data related to area providers external (out-county) to Brevard County and were elicited for the purpose of comparison (of the Brevard EMS system) to other systems in this geographic region. The survey is attached as Appendix C. The sample population for evaluation of the Brevard County EMS system was three. The sample population of the survey for regional evaluation was 14. Statistical analysis was confined to simple averages of financial data and anecdotal comparison of non-financial data.

### **Limitations of the Project**

Limitations of the study include that tax equity is not possible in the current system of using real property tax assessments to support the EMS system. It was assumed that property tax for special services is regressive (and therefore inherently inequitable) because the service is also available non-property owners and to visitors, who do not pay the tax. The question of equity addressed in this project is limited to analysis of whether tax payers (who do pay the tax) pay the same amount for the same service. This is a narrow analysis of equity.

Another limitation of the study is that because the three primary providers compete for the same role in Brevard County and because they have a financial interest in the outcome of this project,



information provided by the other agencies to this researcher (who is employed by BCFR) may not have been fully disclosed.

A third limitation is that the complexity of the variety of providers, tax bases, and user fee schedules obfuscate direct comparison.

Another limitation was that survey data were only solicited from Floridian EMS providers due to time and size limitations of this study. Comprehensive data (including tax bases, financial records, etc.) were only solicited from Brevard County providers. Statistical analysis was also a limitation of the study. The survey was not a pedigree survey and was not designed, due to time constraints, for effective statistical analysis.

An assumption made by the study was that public funding of EMS systems has been accepted by the community and is not a question to be addressed in this study.

## **RESULTS**

Results of the survey of in-county providers indicates that tax payers pay three different EMS assessments that range from \$14.92 to \$39.30, depending on which of three geographical assessment areas, in which they own property. It also indicates that base fees for EMS transport service vary from free to \$260. The three providers have different collection rates on their user fee systems. The collection rates varied from 60% to 90%. BCPSD and CAS were 85% and 90% respectively.

One provider (BCPSD) provides the service with units staffed by two paramedics as opposed to one paramedic and one Emergency Medical Technician (EMT) as allowed by law and the regional standard of care.

Expenses for the three in-county agencies are similar with two exceptions. BCPSD must pay

16% more for benefits than the other providers because firefighters are included in the Florida State Retirement System and receive “special risk” benefits. The other exception is that BCPSD is not required to pay overtime to firefighters until they work more than 106 hours in a two week period. CAS and HCVAS must pay overtime for more than 40 hours worked in any single week.

Overall operating expenses were higher for HCVAS. BCPSD achieved cost savings due to bulk purchasing ability and it’s ability to capitalize on governmental consortium contract purchases. A participant in this group of governments may use the contract of any other group member to make a contract purchase at the lowest available price (for example, Brevard could purchase, at the contract rate, an ambulance as a “coat tail effect” of an ambulance contract purchase by Pinellas County). Brevard County also participates in a Florida governments group self insurance program. BCPSD and CAS purchase ambulances outright with capital funds. HCVAS finances ambulances and pays interest on their purchases.

HCVAS anecdotally reported they are in financial crisis, are in process of an audit by Medicare and Medicaid authorities, and have been given a substantial fine as a result of the audit, which they are contesting. They report their financial prognosis is poor and they cannot predict a financial future for their organization. They also reported there are two malpractice suits being processed against them. They also identified higher vehicle repair costs and lower vehicle preventative maintenance costs.

The out-county respondents indicated that those agencies which transport do charge users for the service and their median charge is \$305. Only one provider surveyed used the subscription system. Pinellas County (Florida) offers an individual subscription for \$35 and a family subscription for \$60. All surveyed providers indicated their EMS systems are funded by a combination of user fees and either

Ad Valorem or non Ad Valorem tax similar to Brevard County's special EMS assessment system.

Most respondents support N-EMS transport systems solely by user fees.

Interviews indicates none of the Brevard County providers currently has a documented long range strategic plan for development of EMS systems. Each of the in-county providers provides a separate infrastructure for management, materials management, ambulance purchase, patient billing, insurance, employee housing, business offices, and related general overhead. All three providers provided advanced life support (ALS) service. ALS service is defined as a paramedic level service which has the capacity of treating patients with medications, intravenous therapy, minor surgical procedures, and cardiac monitoring.

Search of tax records indicates Brevard County has three EMS assessment (geographical) districts. These are North, Central, and South. The EMS assessment (see Appendix A) is \$28.69, \$14.92, and \$39.30 respectively.

Patient billing information indicates each area has EMS/N-EMS transport billing rates of (North) \$260/\$150, (Central) \$260/\$150, and (South) no cost/\$145.

The research questions were all answered by the project. All recipients of EMS or N-EMS transport in Brevard County receive the same level of EMS service, which is advanced life support. Brevard County EMS providers do not charge the same for services. The tax base (EMS assessment and/or user fees) for EMS services is not the same throughout the county. The current combination of providers and services duplicates many services and is therefore not the most cost efficient management of EMS resources.

The null hypothesis, "Brevard County is currently providing the most equitable and cost efficient

EMS to all persons in Brevard County”, is not supported. The alternate hypothesis, “Brevard County is not providing the most equitable and cost efficient EMS to all persons in Brevard County” is supported. Tax payers pay different assessments and different user fees for the same service and therefore the system does not meet the project’s definition of being equitable. The county is not providing the most efficient service because the providers are duplicating many services and overhead costs.

## **DISCUSSION**

The results of the study compared favorably with funding problems and techniques identified in the literature search. The “subscription” program which is in use by Pinellas County is a potential income source that Brevard will explore. The surveys indicated Brevard’s fee system is set too low.

Several industry specific terms are defined in Appendix A: Terms. These include definitions of Emergency Medical Technician, Emergency Medical Technician-Paramedic, Advanced Life Support, Basic Life Support and a few others.

The Brevard EMS system charges less for its services than any of the adjacent counties and less than the median fee of the survey respondents. The system also is duplicating services by allowing three providers to function independently. The lower fee structure in conjunction with the inefficiency of operation suggests that either Brevard County is providing a less effective service than adjacent counties or that a larger portion of the funding is tax based than adjacent counties.

The special EMS Assessment tax is regressive by taxing only property owners rather than recipients of the service. It is further regressive because it varies among the districts as does the user

fee. This is inequitable and has precipitated citizen complaint which resulted in this study. Citizen complaints were directed at costs and not at the quality of the service.

One provider, Harbor City Volunteer Ambulance Service, has been irresponsible with fiscal management. This is evidenced by their audit by Medicare and Medicaid, the audit order to repay improperly billed funds to Medicare and Medicaid, their high interest rates on ambulance purchases, their high vehicle maintenance/repair costs related to their low preventive maintenance activities, their low collection rates, and their current financial crisis. They and CAS do not share the purchasing advantages of the Florida government consortium, sovereign immunity, protection under the FLSA of overtime (between 40 and 53 hours/week), savings provided by the government self insurance program, or ability to purchase in quantity. These findings suggest HCVAS is not the most efficient provider of choice.

The evolution of the system has allowed geopolitical considerations to affect the development. Quality appears to be satisfactory while equity and efficiency are not. The organizational implications are that change is the system will be coming. Strategic management of change will increase the successful improvement of the system and diminish the difficulty with process. Each of the three organizations must prepare for greater competitiveness, fiscal accountability, and modification to its operational structure. It is probable that only one or two of the three organizations will survive the consolidation of management services and purchasing that seem to be needed by the system.

## **RECOMMENDATIONS**

These recommendations are related to the purpose and stated problem of the study in that they offer solutions to the problems identified in the lack of support for the null hypothesis that the EMS system is efficient and cost effective.

These recommendations will be presented to the Public Safety Director for his review and possible presentation to the Brevard County EMS Strategic Plan Committee and/or to the Brevard County Board of County Commissioners.

It is recommended Brevard County Board of County Commissioners move to consolidate Emergency Medical Service and Non Emergency Medical Services under the administration of one agency which will be charged with eliminating duplication of services, maximizing purchasing ability, and providing transport services at a standard cost to all users. Incorporated in this recommendation is the recommendation that capital purchases (including vehicles) remain the property of the county so that if any provider should default in their ability to provide service, the (capital) start up costs of a government or second service be minimized.

It is recommended Brevard County Board of County Commissioners move to level the EMS Assessment tax and the cost of transportation services in each of the EMS Assessment districts to be consistent regardless of geographical location.

It is recommended EMS funding should include all existing funding sources and should be expanded to allow funding by subscription and impact fee assessment. User fees should be raised to the level of adjacent counties (at least \$305).

It is recommended all vehicles, materials, contracts, and general purchases over \$1,000 shall be

made through the Brevard County Board of County Commissioners to allow economy of scale through the existing government consortium.

It is recommended Brevard County Board of County Commissioners continue to evaluate and make strategic plans for improvement of the EMS system and that the EMS Strategic Planning committee work to develop a plan for change to incorporate the recommendations the Board of County Commissioners finds acceptable.

It is recommended this project be repeated, redesigned to circumvent the limitations identified, and expanded to a national scope and include in depth financial analysis of EMS systems outside the geographical boundaries of Brevard County.

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## APPENDIX A: TERMS

**advanced life support (ALS):** Advanced life support is a level of care provided to the prehospital patient. It includes invasive techniques such as intravenous therapy, administration of medication, limited surgical procedures such as cricothyrotomy, and electrical therapy for heart problems.

**ambulance:** An ambulance is a vehicle used to transport ill or injured persons to a hospital or between hospitals.

**basic life support (BLS):** Basic life support is a level of care provided to the prehospital patient which non-invasive techniques are used for patient treatment. BLS does not include iv therapy, administration of medications, or electrical therapy for heart problems.

**Certificate of Public Conveyance and Necessity (COPCN):** This is a certificate issued by each county in Florida to allow an EMS provider to work in that county.

**COPCN:** see Certificate of Public Conveyance and Necessity

**Emergency Medical Technician:** This is a level of certification for personnel who work on ambulances that indicates they are trained in non-invasive emergency medical procedures and skills required to transport patients by ambulance to a hospital. An EMT provides Basic Life Support.

**Emergency Medical Technician--Paramedic:** This is a level of certification for personnel who work on ambulances that includes all the training for Emergency Medical Technician and provides additional training in invasive techniques such as intravenous therapy, medical diagnosis, administration of medication, dysrhythmia recognition, and electrical therapy for heart problems. An EMT-P provides Advanced Life Support.

**EMS provider:** EMS provider is an agency or organization that provides prehospital emergency medical services to the ill or injured who request service.

**EMS:** see Emergency Medical Service System

**EMT:** see Emergency Medical Technician

**EMT--P:** see Emergency Medical Technician--Paramedic

**paramedic:** see Emergency Medical Technician--Paramedic

**provider:** see EMS provider

**rescue unit:** This is an ambulance which has some forcible entry tools and is usually a fire department vehicle.

**APPENDIX B: TABLE OF BREVARD COUNTY EMS PROVIDERS**

Area	Emergency Transport Provider	Non-Emergency Transport Provider	EMS Tax Assm't.	User Fee Em/Non-E
North	BCFR	CAS	\$28.69	\$260/\$150
Central	BCFR	CAS	\$14.92	\$260/\$150
South	BCFR	HCVAS	\$39.30	None/\$145

### APPENDIX C: EMS PROVIDER SURVEY

Please answer all questions and return to District Chief Rich Wiederhold/ 1040 Florida Avenue/  
Rockledge, FL 32955. Thank you.

1. How is your EMS service funded? (assessment fees, user bills, taxes, subscription, etc)?

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2. How does your service procure ambulances (lease/purchase, purchase, finance)?

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3. How does your EMS service refurbish ambulances?

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4. How does your EMS service maintain vehicles (contract, county fleet, city fleet, other)?

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5. Does your EMS service transport emergency or non-emergency patients to the hospital?

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6. If your service transports, do and how much do you charge for services?

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7. Does your agency charge additionally for oxygen or for mileage or for elective transport?

If so, how much? \_\_\_\_\_

8. Does your agency staff EMS units with:

1 EMT and 1 paramedic? \_\_\_\_\_

2 paramedics \_\_\_\_\_

other (please explain) \_\_\_\_\_

Thank you for your assistance. Please include your return address on this page if you would like a  
summary report on the results of this survey.

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## APPENDIX D: EMS SERVICE AREAS OF BREVARD COUNTY

The map displays current EMS boundaries which segregate EMS provider franchise areas and the related EMS Assessment benefit units. Colored areas identify commission districts.

1997 EMS Assessment billing records show the following population and revenue distribution for Brevard County

North Benefit	92,030 dwellings
Assessment Revenue	\$2,640,341
Central Benefit	104,078 dwellings
Assessment Revenue	\$1,552,843
South Benefit	7,079 dwellings
Assessment Revenue	\$278,204

Funds collected through EMS Assessment billing are for EMS services only, not N-EMS as designated by EMS Ordinance 95-54.

